DOCUMENT RESUME

ED 337 154 IR 015 207

AUTHOR Gutenko, Gregory
TITLE Penetrating the Glass Wall: Creating and Retaining the Interactive Illusion in Televised Distance Education.
PUB DATE May 91
NOTE 14p.; Paper presented at the Canadian Communications Association Conference (Kingston, Ontario, Canada, May 30, 1991).
PUB TYPE Guides - Non-Classroom Use (055) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Communication (Thought Transfer); *Distance Education; *Educational Television; Interaction; Postsecondary Education; *Production Techniques; *Programing (Broadcast); Teacher Student Relationship; *Teaching Methods

ABSTRACT

Current interests in and implementations of televised distant education technology systems and programming mark what can be considered the third attempt to deliver instruction to remotely situated students. To compensate for diminished stimuli (losses in visual resolution, three dimensional space, sound perspective, etc.), adroit users of educational television have developed techniques for constructing and selecting content and for presenting this content through the video medium. Two strategies can be noted: preserve and retain as much of the reality as is possible from mediation, and compensate for what is unavoidably lost by exploiting and enhancing the special attributes of the medium. For example, the illusion of interaction between teacher and students may be supported by such production variables as: (1) unified eyelines, in which all participants are at a common eye level; (2) perspective, or, the distance between the viewer and the things being viewed; and (3) eye contact. Telecast instructional delivery can be improved upon primarily by positive applications of these production techniques; however, an instructor's teaching methods are also a factor in successful communication. (12 references) (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED337154

Penetrating the Glass Wall: Creating and Retaining the Interactive Illusion in Televised Distance Education

Gregory Gutenko

Department of Communication Studies
University of Missouri-Kansas City

5712 West 92nd Terrace
Overland Park, Kansas 66207 USA
(816) 235-2729 (office)
(913) 341-0365 (home)

e-mail: GGUTENKO@UMKCVAX1.BITNET

Presented at the Canadian Communications Association Conference
Queen's University, Kingston, Ontario, Canada on May 30th, 1991

120152207

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gregory Gutenko

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Penetrating the Glass Wall:
Creating and Retaining the Interactive Illusion in Televised Distance Education

Gregory Gutenko

Current interests in and implementations of televised distant education technology systems and programming mark what can be considered the third widespread attempt to transcend the walls of the classroom and deliver instruction (and instructors) to remotely situated students using the video medium.[1] Insufficient attention and study has been devoted, however, to the communication obstacles inherent in this medium. There has always been a pervasive hyperbole concerning television's "impact" and power to engage audiences, and many who are new to the use of video communications assume and trust that this medium automatically will endow their message with a compelling allure. Some may remember when, decades ago, television was truly captivating in and of itself, a fascinating new household presence. Instituting the delivery and reception of televised distance education programming also carries with it an aura of novelty, but this novelty will also evaporate quickly. Television at large is a commonplace thing, an idly regarded feature of everyday life that rarely stimulates much beyond viewer acquiescence. Its powers of persuasion are resident in the repetitive delivery of consistent and redundant advertising, entertainment, and cultural messages. Television is still, by its nature, a medium that filters and reduces actuality, and it transmits always less than what is placed before its lenses. It truly *mediates* communication.

There is a wall here that must be contended with, a glass wall constructed of lenses and video screens, that separates the observed from the observer. On one side, the surface of the glass wall is a television camera lens at a telecast teaching origination site. On the other side, the surface is the screen of a television receiver at a distant location. This wall can be hundreds of miles thick. Light does not travel easily through such a dense medium; visual resolution is poor, colors are distorted, there is no touch, there is no peripheral vision or hearing. Penetrating this wall successfully necessitates a full consideration and exploitation of the attentional variables which can be sent through this wall. Those variables which are affected by production methodology are the subject of this paper.

To compensate for diminished stimuli (losses in visual resolution, three dimensional space, sound perspective, etc.) adroit users of the medium have developed many techniques and criteria for constructing and selecting content and for presenting this content through the video medium. Two basic strategies can be noted: preserve and retain as much of the reality as is possible from mediation, and compensate for what is unavoidably lost by exploiting and enhancing the special attributes inherent in the medium (manipulating time, presenting images of far removed events and phenomena, etc.)

What this means in practical terms, for the task of tele-teaching, is retaining and conveying as much as is possible of the instructional deliverer (as is desirable), and compensating for inevitable mediation by applying television's communicative strengths in flexible graphic/visual illustration and audio support. The techniques of such video and audio enhancement are easily appreciated by television users. Less recognized and appreciated are the techniques of retention, the retention of visual cues and behaviors that are vital communicative indicators appreciated in live interpersonal settings, which are too typically stripped away when teaching is packaged for television. Important attentional variables which contribute to the effectiveness of classroom instructional delivery are frequently lost by the process of televising.

The Need for the Illusion

Disenchantment and dissatisfactions with the use of television for instructional delivery, which first occurred in the late 1950s with ETV/closed circuit video and again in the late 1960s and early 1970s with videotaped productions, have not been systematically reviewed and addressed by many contemporary distance education proponents. It is possible that many are busily reinventing the wheel, and that their wheels still aren't round.

One observation concerning the loss of interest and support for the earlier applications of video in instruction faults the lack of interaction and interpersonal dynamics which normally exist between the teacher and student in conventional classroom settings (Scholastic Magazine). It should not be surprising, but the same concern is being voiced once again regarding today's efforts (Brown; Cambre). "Those who cannot remember the past are condemned to repeat it."(George Santayana)

Current technology enables live presentation, which is not a new capability, and live voice exchange with distant students by telephone, which is a new capability but one which is not often utilized by students (Gutenko). Most promoters of distance education evidently feel that this provides for an adequate engagement of the distant auditor/viewer. I would suggest that critical components of interaction (or, as applied to the unique situation of televised instruction, the *appearance* of interaction) are inconsistently and

inadequately dealt with, if at all, by the current generation of experimenters and practitioners of televised distant education.

While interactive reality is certainly preferable to the mere illusion of it, the cost and complexity of implementing such capabilities is daunting. The appearance of interpersonal engagement, a performance skill commonly exercised by mass media personages, is not without its value in creating a sense of interaction with auditor/viewers. Developing telecasting site designs and techniques which can convey similar interpersonal communication cues when originated by non-media trained instructors requires a new level of "hardware transparency" and a comfort level encouraged by telecasting devices which can masquerade as teaching aids or prompts.

Turn On, Tune In, Drop Out?

It is not uncommon for instructors at post-secondary institutions to find fewer students accounted for on their class roster at the end of a semester than were listed at the beginning. At some institutions, there may be little concern for how many students drop out and why. A student may withdraw from a class for many reasons. The nature of the course might have initially been misconstrued, and later deemed inappropriate or uninteresting. Failure to keep up with the progress of the class, or other academic setbacks on the students' part will motivate their departure. Sometimes, "real life" crises and involvements displace their academic pursuits to an insignificant level in their priorities. Sometimes, the instructional delivery of a course fails to hold their interest or spontaneously adapt and engage their modes of communication and learning.

The attrition rate for students enrolled in televised courses is, by all accounts, often higher than for attended courses (Carl). Some observers estimate the dropout rate to be double that found for conventional learning (Clark and Verduin). Certainly, there are no accounts of televised courses having fewer dropouts than comparable attended courses. It is acknowledged that those students who enroll in and complete televised courses are more highly motivated than the average student (Speth; Carl). While some educators might be somewhat pleased that televised instruction appears to weed the student population and provide a "fittest survivor" selection of elite scholars, this should be considered a point of failure by institutions which are state supported. Public funding is allocated to such institutions on behalf of all citizens, even those who can muster up only an average motivation towards study. If state supported institutions are channeling large amounts of their physical and academic resources into the development and maintenance of instructional delivery systems that only the most persevering citizen can survive, how fair and equitable is the state supported educational opportunity?

A highly publicized outcome of televised distance education is the apparent equivalency of student achievements between televised and attended classes. Most comparisons show equal or slightly better grade-point achievement by television students. If however, we are comparing the performance of highly motivated television students with that of the average student in an attended class, then what we might actually be observing is the reduction of highly motivated student achievement to the level of average motivation student performance.

The Illusion of Interaction

The predominant shot used in most live television courses is the "talking head" of the instructor, unless there is in addition a considerable amount of course time allocated to viewing graphics or the instructor's sketchpad and/or chalkboard. The term "talking head" customarily has a diligently earned negative connotation, suggesting a boring, stilted image, as was noted in the past (Cambre, p.6) and is often noted today. However, a "talking head" can be a compelling image, if the viewer is interested in and engaged by the subject. Bill Moyers of the Public Broadcasting System has produced a number of "head-to-head" programs, as in the series with Joseph Campbell, *The Power of Myth.*.
In the television news industry, the most highly paid and critically valued personnel are the "talking heads". The importance of the human image in the mix of all images used in news and information video programming is undeniable.[2]

What is the difference, then, between the "talking head" that holds the viewers' attention and the one that does not? What attributes of the image and staging of the shot leads to one subject developing a para-social bond with their audience while another subject gets "tuned out"? The para-social interaction between television performers and viewers can create in some members of the public a sense of camaraderie and familiarity with the media performer that requires great patience, professional aplomb, and understanding to endure (Horton and Whol, 1956; Levy, 1977; Levy, 1979; Atkins, 1984). Certainly, the physical characteristics possessed by a particular media "talent" and their well utilized communication performance skills are critical variables. Personal charisma is a key factor. Beyond personal magnetism and refined professional delivery, however, are a number of image and staging factors that will affect the presentation and apprehending of any subject placed before the camera.

Most pertinent to the production of live television instruction are the "formal" variables of unified eyelines, eye contact, and perspective. The validity of these particular production variables in affecting the perception of televised subjects by viewers has been corroborated experientially by media professionals and by those academics engaged in media production teaching. There is one series of studies where variables such as subject

framing, eye contact, and camera position and movement have been experimentally tested (Baggaley, Ferguson, and Brooks, 1980). However, the significance of such variables is difficult to test with adequate control, and more empirical study is needed. On the other hand, perhaps too much has been speculated about in critical studies literature and other qualitative, author reflexive interpretations of production form. Such ruminations tend to be of little practical value, since these approaches suffer from "theory du jour" inconstancy.

Creating and Maintaining the Illusion

Clearly, televised instruction appears to be having problems with both student retention and student performance. Turning on the hardware and tuning in the transponder isn't enough. People are dropping out. Many are not completing courses. Many have had their fill of televised teaching after surviving one course, and are not repeating the experience. If the receptivity of telecast instructional delivery can be improved upon by positive applications of production techniques, then even if these techniques create mere illusions, this contribution needs to be availed of by distance education practitioners.[3]

The production variables of unified eyeline, eye contact, and perspective are essentially independent of a media subject's personal attributes. Achieving unified eyeline and desired perspective are the outcomes of staging, and involve the constructive placement of cameras, monitors, and people. Eye contact, on the other hand, is a behavioral or performance outcome encouraged and facilitated, but not guaranteed, by staging design.

Unified eyeline This attribute of a production is simple to describe, simple to achieve if it is accounted for in studio/classroom design at the start, but is not so simple to extoll as an obvious factor in facilitating the illusion of visual interaction. Having a unified eyeline means having all the participants in the interpersonal exchange (instructor, on-site students, and distant students) situated so as to be at one common eye level, so that everyone is sharing the same visual plane. This is a fastidiously attended to variable in television and film, achieved by having the chairs occupied by persons on television sets placed on platforms, or by having the camera lowered or raised to different heights, so that the camera lens is on the same horizontal plane as are the eyes of the talent. Rarely are persons looked up to or down onto, unless it is to suggest some important displacement or lack of equivalency between that which is being viewed and that which is doing the viewing.

Many deviations from the unified plane of vision occur in televised teaching, where the instructor may look down to the on-site students, up to the camera, and to the side to a monitor. Shots of the on-site students may have them looking up to a monitor to see

profiles of themselves, (or worse, the insides of their nostrils), being captured by a camera that is looking sideways or up at them. None of these deviations is done for the purpose of intentionally conveying disparity between the participants of the course; it just comes out that way thoughtlessly. The primary concerns of those who decide the placement of cameras, monitors, and seating are for equipment security, ease of servicing, efficient cable runs, and an unquestioning conformity to the seating and podium/lectern layouts of conventional classrooms. It is rare that placement is made with any thought given to the actual images that will inevitably result from the location of cameras, monitors, and people.

Perspective

Perspective is the most subtle factor of the three that are under discussion. The distance between the viewer and the things being viewed is revealed by the perspective, or relative differences in sizes of the things viewed. Foreshortening, convergence of lines, and other descriptive terms relating to the enlargement of close objects and the diminution of far objects are all references to perspective. Film directors and cinematographers are quite particular about their use of specific camera-to-subject distances. A subject shot from a distance, even though the focal length of the lens being used may magnify the image so the subject fills the frame, still looks like it was captured from a distance; it looks "flat". Sophisticated camera users are convinced that viewers will respond to the effects of perspective and recognize the distance from the subject at which they (through the camera) have been placed by the director or cinematographer. This regulates the spatial intimacy of the viewer and subject.

Perspective is the most subtle factor of the three that are under discussion. This statement bore repeating. Those who teach film and video production know how difficult it is to "point" to this aspect of image manipulation, and it is understandable why this factor might be left uncontended. To accord it its proper significance, however, it means that an instructor that is shot with a camera mounted in the back of a room will be viewed with the perspective of someone seated at the back of the room. Magnifying this image with a telephoto lens will largely negate this perception, especially if only one object is included in the shot, the instructor. The visual cues to perspective will exist only if there are other objects included in the shot, located in front of or behind the instructor, whose size relationships can be observed. Therefore, perspective cues can be eliminated, to confound any perception of great distance.

What if, however, it was desirable to create a sense of greater intimacy, or it is not possible to eliminate other objects in the instructor's environment? In this case, it is essential that perspective be dealt with, and that the camera dedicated to the instructor be located at an appropriate distance for the level of intimacy that is desired. The perception

and accordance of "personal space" is recognized similarly by members of a particular culture. In our own, we would feel the intrusiveness of a camera that is situated two feet from the instructor's face. We would apprehend the detachment of a camera that is thirty feet away from the instructor (if perspective cues are visible). For most situations in the media, the distance that is desirable in face to face interaction is also the appropriate distance between camera and subject.

Eye Contact The seasoned media professional learns how to regard the black hole of the camera lens with compassion, cordiality, lust, deep respect, and any other projection of emotion or argument required by the objectives of the delivered message. The media professional also learns how to hear and see "out of the corners" of their senses; monitors and other devices are watched with peripheral vision, and verbal instructions from directors are listened to without missing a beat in performance. Their eye contact with the viewer does not waver, except when their visual connection needs punctuation, for effect. This is an exceptional, highly developed illusion of rapport, expected of one whose professional career obligation is to project the proper image.

The great challenge for the television course producer or director is finding a means by which the non-media professional, the instructor, can project themselves through the glass wall with some of this illusion of connection that is delivered adeptly by the professional talent. Some have resurrected the "candid classroom" design, expecting that hiding the cameras will somehow put the non-media person at ease. This, however, makes eye contact with distance students an impossibility, and the candid classroom tends to treat the remote observers with a view not unlike that of a security camera dispassionately regarding a shoplifter in a convenience store. There is a complete visual disconnection, with not the slightest illusion of awareness by the instructor that there are participants whose presence should be acknowledged. It is also debatable that *awareness* of a camera, unseen or not, negates any sense of ease that a true hidden, unknown, camera would not violate. Are instructors ever televised without being aware of their being televised?

The trick then, (and it must be regarded as a trick,) of staging is to provide some simple, supportive motivations to get the instructor to look towards a camera that is within visual range. The appropriate bait to lure the instructor's gaze is a monitor which is providing valuable guidance.

While many who are new to telecasting activities are aware of the teleprompting devices that can be positioned so that a camera can shoot through the display screen from behind, some are not aware that the prompting screen can display any image that is desired, aside from script copy. It can display the graphics being shown to the class, the course as

it is being sent out, video being returned from remote sites, or any other video signal that is desired, if a simple switching device is used to route signals to the prompter screen. Many instructors do not read lecture notes verbatim, and so the conventional application of the script prompter would not be needed.

A fixed, non-moving prompter screen, placed at an appropriate distance from the instructor, and provide the instructor with whatever monitoring function they would be comfortable with. It might display only a clock. The instructor's camera would operate unseen behind the screen. Perhaps the most thoughtlessly positioned device in some television classrooms is the conventional, direct-viewing monitor. They will be placed to the side of the room. They are sometimes concealed in the podium. As a result, the instructor is constantly looking to the side, or down into the desktop, treating the distant students to an unremitting view of the hair statement of the instructor. Again, it must be noted that professional media talent are trained to view these sorts of monitors with their peripheral vision, and keep their eye on their camera. The non-media-seasoned instructors look directly at such monitors.

Providing the monitoring function through the prompter itself keeps their eyes naturally on target. While the instructor is looking at their notes, graphics, or videotape inserts, the illusion for the distant participants is that the instructor is regarding them, including them in the progression of the lesson. What precisely gets displayed on the prompter would be determined by the reassurance needs of the instructor, and those who are technologically comfortable might wish to switch their display sources themselves from a simple selector at the podium (there would be no need for precise, vertical interval switching on the prompter system).

It has also been observed that over-the-shoulder or other direct monitors provided for the benefit of on-site (studio) students need to be dedicated to show only graphics and other instructional illustrations. When on-site students are shown to themselves, especially if they are speaking, the experience is either disconcerting or provocative. It can interfere with the cognitive formulation of a response or question as they unavoidably respond to and evaluate their appearance on camera. This, of course, would necessitate the use of a second switching system, other than which is controlling the televised material.

If the production protocol required by the instructor includes the presence of students in the television studio or classroom, it is important to remember that the instructional delivery of this system is what goes out over the air. Placement of on-site students should not undermine the staging of the production; they should be few in number and grouped around the prompter so that the instructor's sight will remain directed towards the prompter and camera. It is counterproductive to try and make one facility work well

both as a conventional, large volume classroom and as a telecasting environment. Both objectives will be compromised.

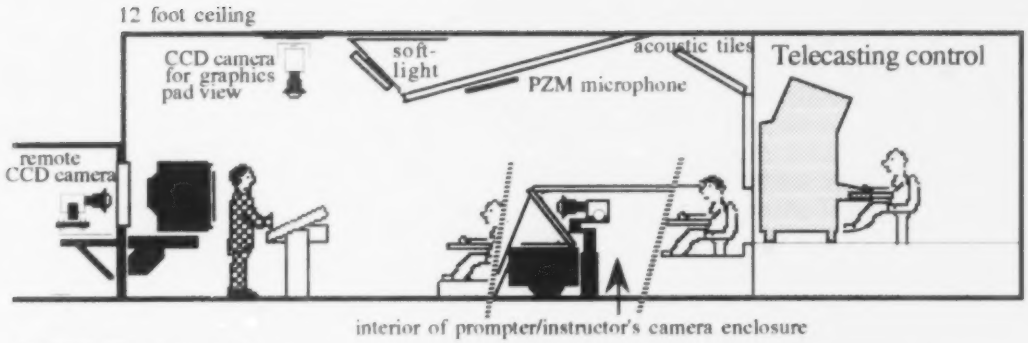
The illustration page suggests a general appearance for a telecasting room developed to support the creation and maintenance of an illusion of visual interaction. The design is based on a particular space that might become available to a client of this author. It anticipates the use of very small remote controlled CCD cameras at all positions, although the camera dedicated to the instructor is located in an enclosure (inspired by the OMNIMAX projector head enclosure used in planetariums) located at the front of the room in the middle of the student seating. The enclosure also houses the prompter monitor, which is larger than conventional units since it is floor, not camera, mounted and can be much heavier. The dedicated camera's framing and compositional movements would be guided by an RF transmitter included in the instructor's talkback earphone, which will provide a target reference for a "shotbox" based camera tracking system. The enclosure, however, is large enough to seat a camera operator, with camera viewfinder and controls, in case the tracking system should fault out, and access to the enclosure is from the video control room and out of sight of the classroom.

A First Course in Televised Distance Education

Live television instruction is not new. It has been around for a very long time. And yet remarkably few of those who are practitioners in the current revival are aware of this history. Even fewer have consulted the decades of research and study in this area.

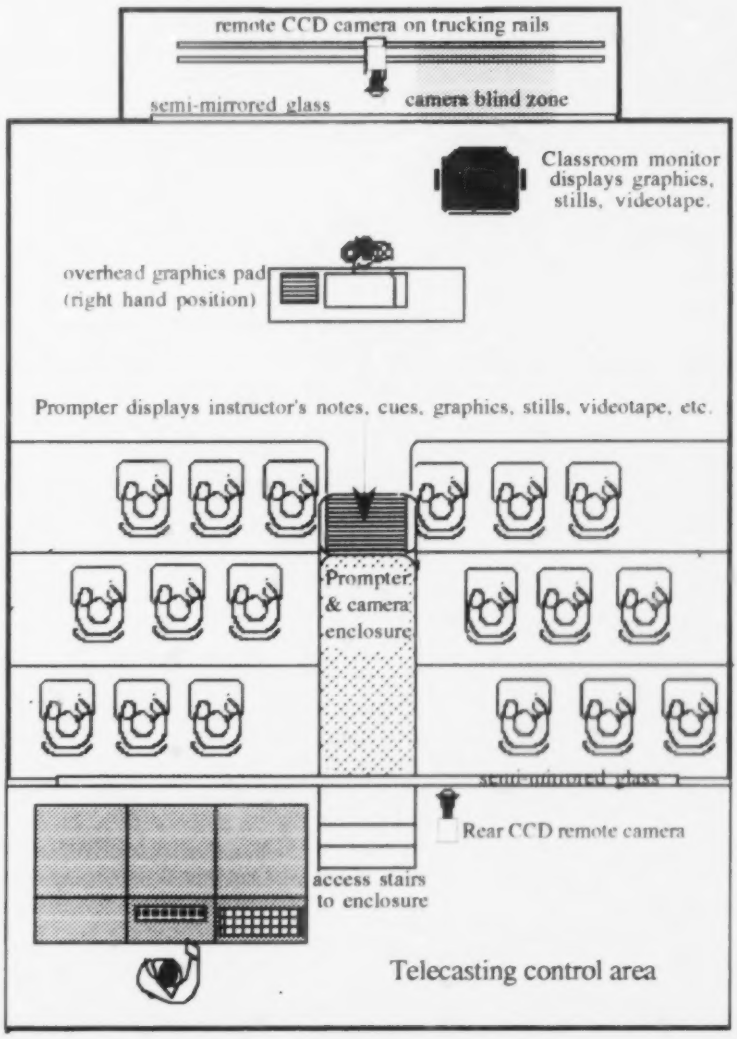
How many of those involved in the production, design, politicking, and promotion of televised distance education have actually taken a television course? One of their own, or someone else's? All may have sampled snippets and excerpts of selected highlights, but who has endured a full course? How many understand as a *consumer* of this educational product that is being so skillfully packaged, so aggressively marketed, and so widely distributed? There are many chefs who are serving up a cuisine that they have yet to ingest and survive on themselves.

The technological determinists who permeate the televised distance education movement point always towards newer and more expensive hardware solutions to counteract and amend the shortcomings of this "new" approach to education. It is important to remember that it isn't always so much the sophistication or abundance of the tools available, but the skill, knowledge, and intelligence with which they are used that determines the excellence of the product created.



Facility Attributes

- All eyelines at same level. Instructor, cameras, prompters, students and monitors share common sight plane
- Instructor's camera positioned for close (front row) perspective
- TelePrompter draws instructor's attention to increase eye contact frequency
- Instructor's camera responds immediately to movement using RF tracking


remote CCD camera on trucking rails
semi-mirrored glass
camera blind zone
Classroom monitor displays graphics, stills, videotape.
overhead graphics pad (right hand position)
Prompter displays instructor's notes, cues, graphics, stills, videotape, etc.
Prompter & camera enclosure
semi-mirrored glass
Rear CCD remote camera
access stairs to enclosure
Telecasting control area

Television classroom design for enhanced visual interaction

scale 1/8" = 1 foot © Gregory Gutenko 1989

1/4" scale plans with equipment specifications and wiring requirements can be made available from the designer

Notes

1. Identifying three particular widespread efforts to adapt the television medium into a significant teaching system is somewhat arbitrary. The first wave of development was certainly in the late 1950s and early 1960s, when, in the United States, National Educational Television (NET) and many associated educators utilized their UHF allocations to deliver live courses. The high cost of production (there were no industrial or"prosumer" grades of equipment then; it was all enormously expensive and complex), and the encroachments made by vociferous commercial broadcasting interests with designs on license allocations and frequency reservations doomed these efforts. There was hardly time to truly evaluate the instructional design and methods being used. The second wave started when videotape recording of an affordable nature was marketed (first 1/2 inch monochrome and then color Umatic) and media departments turned this technology towards classroom recording and proprietary instructional materials production.

2. KSHB 41, an independent television station in Kansas City Missouri, experimented with a newscast format where the anchors and reporters were never seen on camera. *41 Express* screened only news event footage and graphics. It never developed a measurable audience before it was cancelled.

3. Sylvie Richard's account of her first experience as a telecourse student gives a good idea of the power of the television illusion. Her TV instructor often encouraged students to write to him with additional questions (there was no live audio interaction available). This she did several times, but received not one reply. At the end of the course, she mentioned this neglect of her inquiries to the teaching assistant at her location, who apologized on behalf of the distant professor, who had died three years earlier.

Works Cited

Atkins, Vicki. "Seeing Through the Glass Darkly: The Television Newscaster and Para-Social Interaction with Viewing Audiences." (Master's thesis, University of Missouri, 1984)

Baggaley, Jon, Ferguson, Margaret and Brooks, Philip. Psychology of the TV Image. New York, NY: Praeger, 1980

Brown, Claire E. "The live video teleconference in distance learning." Lifelong Learning: An Omnibus of Practice and Research. vol.11 no.5 (1988) p. 9

Cambre, Marjorie A. A Reappraisal of Instructional Television. Syracuse, NY: ERIC Clearinghouse on Information Resources, 1987

Carl, David L. "Electronic Distance Learning: Positives Outweigh Negatives." Technological Horizons in Education Journal. vol.18 no.10 (May 1991) p.69

Clark, Thomas A. and Verduin Jr., John R. "Distance education: Its effectiveness and potential use in lifelong learning." Lifelong Learning: An Omnibus of Practice and Research. vol.12 no.4 (1989) p. 25

Gutenko, Gregory. Memo reporting on school site survey in Missouri and Kansas: Observations of student interactions with language course telecasts. (Progress Report, Star Schools Midlands Consortium, University of Kansas, April 26, 1989)

Horton, Donald and Wohl, R. Richard. "Mass Communication and Para-Social Interaction." Psychiatry. no.19 (1956) pp. 215-229

Levy, Mark R. "Experiencing Television News." Journal of Communication. vol.27 no.4 (Autumn 1977)

Levy, Mark R. "Watching TV News as Para-Social Interaction." Journal of Broadcasting. vol. 23 no.1 (Winter 1979) pp. 69-80

Speth, Carol. "Distance Learning: Similarities and Differences in Characteristics of Incoming Students in Satellite as Compared to Conventional Courses." The Missouri Journal For Educational Technology. vol.13 no.2 (Fall 1990) pp. 21-24

"Technology Comes to the Classroom." Scholastic Magazine. vol.74 no.11 (May 17, 1959) p.16